

REMARKS

This responds to the Office Action mailed on June 7, 2004.

Claims 29-31 are amended, no claims are canceled, and claim 52 is added; as a result, claims 29-44 and 50-52 are now pending in this application.

§103 Rejection of the Claims

A. Rejection: Claims 29, 32-36, 39-42, 44, 50, and 51 were rejected under 35 USC § 103(a) as being unpatentable over the Applicants' prior art figures (Figs. 1 and 2) in view of Beam, III et al. (U.S. 5,935,641).

B. Response: In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991)).

The rejection of claim 29 is improper since the Examiner has failed to make out a *prima facie* case of obviousness. Claim 29, as amended, now recites "...a seed layer exposed about the periphery of the first opening, the seed layer having a second opening therein; and a layer of piezoelectric material spanning the second opening in the seed layer." In the Office Action mailed on June 7, 2004, the Examiner admitted that the Beam III reference does "...not show an opening in their substrate." Therefore, the Beam III reference fails to show either the first opening or the second opening of claim 29. In addition, Figs. 1 and 2 of the application show the first opening only. In Figs. 1 and 2, there is no second opening in the seed layer. The seed layer is the layer on which the piezoelectric layer is grown. Simply put, neither the Beam III et al. reference nor Figs. 1 and 2 of the application include a second opening in the seed layer.

Therefore, the combination of Figs. 1 and 2 of the patent application and the Beam III reference fails to make a *prima facie* case of obviousness since the prior art references fail to teach or suggest all the claim limitations.

In addition, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings to yield the invention of claim 29. In fact, to remove the seed layer of the prior art of Figs. 1 and 2 would destroy the reference, since doing so would eliminate the electrode of the film bulk acoustic resonator formed. The destruction of the reference in order to yield the applicant's invention proves the lack of a suggestion or motivation. As a result, claim 29 is not obvious in view of the combination of Figs. 1 and 2 and the Beam III reference.

Claims 32-36, 39-42 and 44 depend from claim 29 and include the limitations of claim 29 by their dependency. As a result, claims 32-36, 39-42 and 44 now overcome the Examiner's rejection under 35 USC § 103(a) as being unpatentable over applicant's prior art Figs. 1 and 2 in view of Beam, III.

C. Rejection: Claims 29-36, 39-42, and 44 were rejected under 35 USC § 103(a) as being unpatentable over Larson, III et al. (U.S. 6,566,979) in view of Beam, III et al.

D. Response: Claim 29, as amended, now recites "...a seed layer exposed about the periphery of the first opening, the seed layer having a second opening therein; and a layer of piezoelectric material spanning the second opening in the seed layer." In the Office Action mailed on June 7, 2004, the Examiner admitted that the Beam III reference does "...not show an opening in their substrate." Therefore, the Beam III reference fails to show either the first opening or the second opening of claim 29. In addition, the Larson III reference shows only a first opening. The Larson III reference shows no second opening in the seed layer. The seed layer is the layer on which the piezoelectric layer is grown (the electrode 52 in Larson III). Simply put, neither the Beam III et al. reference nor the Larson III reference includes a second opening in the seed layer. Therefore, the combination of the Larson III reference and the Beam III reference fails to make a *prima facie* case of obviousness since the prior art references fail to teach or suggest all the claim limitations.

In addition, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings to yield the invention of claim 29. In fact, to remove the seed layer of the Larson III reference would destroy the reference, since doing so would eliminate the electrode of the film bulk acoustic resonator formed. The destruction of the reference in order to yield the applicant's invention proves the lack of a suggestion or motivation. As a result, claim 29 is not obvious in view of the combination of Figs. 1 and 2 and the Beam III reference.

Claims 32-36, 39-42 and 44 depend from claim 29 and include the limitations of claim 29 by their dependency. As a result, claims 32-36, 39-42 and 44 now overcome the Examiner's rejection under 35 USC § 103(a) as being unpatentable over the Larson III reference in view of Beam, III.

E. Rejection: Claims 37-38 were rejected under 35 USC § 103(a) as being unpatentable over the combined invention of Larson, III et al. and Beam, III et al., and further in view of Ylillami et al. (US 2003/0102773 A1).

F. Response: As argued above, the combination of Larson, III et al. and Beam, III et al. fails to make out a *prima facie* case of obviousness with respect to independent claim 29. Since claims 37 and 38 depend from claim 29, the combination of Larson, III et al. and Beam, III et al. fails to make out a *prima facie* case of obviousness with respect to claims 37 and 38. The Ylilammi et al. reference also fails to teach the structure of claim 29 and therefore does not teach or suggest the invention as claimed in claims 37 and 38.

G. Rejection: Claims 29-38, and 44 were rejected under 35 USC § 103(a) as being unpatentable over Wadeka et al. (EP 0 771 070 A2) in view of Beam, III et al.

H. Response: Claim 29, as amended, now recites "...a seed layer exposed about the periphery of the first opening, the seed layer having a second opening therein; and a layer of piezoelectric material spanning the second opening in the seed layer." In the Office Action mailed on June 7, 2004, the Examiner admitted that the Beam III reference does "...not show an

opening in their substrate.” Therefore, the Beam III reference fails to show either the first opening or the second opening of claim 29. In addition, the Wadeka et al. reference shows no second opening in the seed layer. The seed layer is the layer on which the piezoelectric layer is grown (the electrode 52 in Larson III). Simply put, neither Beam III et al. reference nor the Wakeda et al. reference includes a second opening in the seed layer. Therefore, the combination of the Beam III reference and the Wadeka et al. reference fails to make a *prima facie* case of obviousness with respect to claim 29 since the prior art references fail to teach or suggest all the claim limitations.

Claims 32-38 and 44 depend from claim 29 and include the limitations of claim 29 by their dependency. As a result, claims 32-38 and 44 now overcome the Examiner’s rejection under 35 USC § 103(a) as being unpatentable over Wadeka et al. (EP 0 771 070 A2) in view of Beam, III et al.

Allowable Subject Matter

Claim 43 was objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Newly added claim 52 is claim 43 rewritten in independent form including all of the limitations of the base claim and any intervening claims. As a result, claim 53 is now in allowable form.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 373-6977) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 1 day of September, 2004.

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